

REMARKS

Claims 1-4 remain pending in this application with claims 1, 2, and 4 being amended by this response.

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Objection to the Drawings

The Examiner objected to the drawings under 37 CFR 1.83(a). The drawings have been amended to include the speech recognition unit, as requested by the Examiner. Furthermore, the signal processing unit, part of Claim 1 as amended, is also shown in the drawing. Support for the speech recognition unit is found throughout the specification and specifically on page 2, lines 25-34. Support for the signal processing unit is found also throughout the specification and specifically on page 4, lines 3-9. No new matter has been entered by these amendments. A new drawing including the speech recognition unit and signal processing unit is enclosed herewith for approval of the Examiner. Formal drawings including these amendments will be filed upon receipt of approval of the Examiner. In view of the amendments to the drawings and the above remarks. It is respectfully submitted that this objection is satisfied and should be withdrawn.

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Rejection of claims 1 and 2 under 35 U.S.C. 102(b)

The Examiner rejected Claims 1 and 2 under 35 U.S.C. 102(b) as being anticipated by Launey et al. (U.S. Patent 5,086,385). In response, independent Claim 1 has been amended to more clearly describe the voice control system of the present invention.

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The present claimed invention recites a voice control system for a technical device, the technical device being connected to one or more appliances. The system includes a microphone array with a plurality of microphones distributed over the device and the one or more appliances. The microphone array converts a detected voice signal to electrical signals. A signal processing unit processes the electrical output signals of

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the microphone array such that background signals are reduced by a spatial separation of the voice signal and the background signals. A speech recognition unit converts these electrical the output signals from the microphone array into operational commands.

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The present claimed voice control system is specifically characterized by containing a number of microphones that form a microphone array, in which all microphones are connected to the same signal processing unit. The signal processing unit combines the electrical output signals of the array such that the speech signal is amplified while background signals are reduced.

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Because, this arrangement works better when the distance between the various microphones is larger, the microphones are distributed not only to the main device, e.g., a television set, but also to connected appliances. A typical appliance being appropriate for this purpose is a loudspeaker box. The output of the signal processing unit is analyzed by a speech recognition unit in order to identify user commands.

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Contrarily, Launey et al. deal with an expandable home automation system containing a central controller which supports multiple different types of communication with both appliances and subsystems. The appliances and subsystems are connected by means of a data bus. Exemplary mentioned appliances include also appliances that "allow for the input of commands by [...] voice recognition systems" (see the Abstract of Launey et al.).

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Further, Launey et al. disclose "voice recognition is utilized by the user to instruct the system to control subsystems" (see column 3, lines 26-28). Though it is recognized that "**such systems must perform under at least low level background noise and must be able to extract key words or phrases out of a speech or general noise background**" (see column 12, lines 61-64), it is respectfully submitted that the description of how to obtain this goal, namely "**by the use of certain hardware, together with certain software to enhance the performance of the voice recognition**

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functions” (see column 12, lines 64-68), does not constitute a description that can be instructive to a person skilled in the art.

The implementation of the voice recognition system in Launey et al. “may be accomplished by means of the central processor and its interconnection [...] to a speech processor which in turn is connected to a remote microphone and a remote speaker” (see column 13, lines 3-7). Figure 1 of Launey et al. shows that the remote microphone and the remote speaker are separate boxes. Launey et al. further specifically points out that the speech processor “is connected to a single [...] microphone” (see column 13, lines 26-28), which may also be located remotely, and that multiple remote microphones are connected to “respective [...] speech processors” (see column 15, lines 37-41).

Launey et al. neither disclose nor suggest that the measures taken to improve voice recognition comprise combination of the output signals of several microphones or the microphone array as claimed in Claim 1 of the present invention. This is a substantial difference with the present claimed invention. Launey et al. does not even address the issue of improving voice recognition.

Accordingly, it is respectfully submitted that the voice control system as claimed in the independent Claim 1 and the dependent Claim 2 patentably distinguishes the present invention from the cited Prior Art. Thus, in view of the above remarks and amendments to the claims, it is further respectfully submitted that this rejection is satisfied and should be withdrawn.

Rejection of claim 3 under 35 U.S.C. 103(a)

Claim 3 stands rejected under 35 USC 103(a) as being unpatentable over Launey et al. (U.S. Patent 5,086,385) in view of Lea (U.S. Patent 6,349,352).

Lea discloses a method and system for providing basic command functionality and expanded command functionality between a plurality of devices in a network. Lea

was cited to show a bidirectional network based on an IEEE 1394 bus. However, similarly to Launy et al., Lea neither disclose nor suggest that the measures taken to improve voice recognition comprise combination of the output signals of several microphones or the microphone array as claimed in Claim 1 of the present invention.

5 Thus, in view of the above remarks and amendments to claim 1 it is respectfully submitted that Lea adds nothing when taken alone or in combination with Launey et al. which would make the present claimed invention unpatentable. It is thus further respectfully submitted that this rejection is satisfied and should be withdrawn.

10 **Rejection of claim 4 under 35 U.S.C. 103(a)**

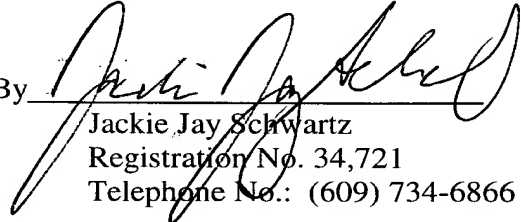
Claim 4 stands rejected under 35 USC 103(a) as being unpatentable over Launey et al. (U.S. Patent 5,086,385) in view of Stein (U.S. Patent 5,963,872). In addition to depending from the new Claim 1 as amended and discussed above, Claim 4
15 as amended specifies that the appliances containing integrated microphones, with the microphones being part of a microphone array, are external loudspeakers.

Stein discloses an electronic equipment audio system. The system is specially configured for wireless telecommunication in accordance with a preselected standard.
20 Modular units are adapted to be secured within components for establishing a telecommunications link with a wireless network. However, similarly to Launy et al., Stein neither disclose nor suggest that the measures taken to improve voice recognition comprise combination of the output signals of several microphones or the microphone array as claimed in Claim 1 of the present invention. Additionally, neither Launey et
25 al. nor Stein individually or in combination, teach or suggest that a microphone being part of a microphone array may be located in an external loudspeaker. Thus, in view of the above remarks and amendments to claim 1 it is respectfully submitted that Stein adds nothing when taken alone or in combination with Launey et al. which would make the present claimed invention unpatentable. It is thus further respectfully submitted that
30 this rejection is satisfied and should be withdrawn.

No fee is believed due in regard to the present amendment. However, if a fee is due, please charge the fee to Deposit Account 07-0832.

5 In view of all of the foregoing, it is submitted that the amended application is now in condition for allowance, and such action is respectfully requested.

10 Respectfully submitted,
Ernst F. Schröder

15 By 
Jackie Jay Schwartz
Registration No. 34,721
Telephone No.: (609) 734-6866

20 THOMSON multimedia Licensing Inc.
Patent Operations
Two Independence Way, P.O. Box 2023
25 Princeton, NJ 08540
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